

ABSTRACT OF THE DISCLOSURE

[00312] A drive circuit (18) produces a drive signal having a waveform of a predetermined waveform shape for a device (10) having a piezoelectric actuator (14). The drive circuit (14) includes a memory (140) which stores waveform shape data which is utilized by the drive circuit in producing the drive signal. The drive circuit utilizes the waveform shape data so that, for each of plural points comprising a period of the waveform, the drive signal has an appropriate amplitude for the predetermined waveform shape. The waveform shape data has preferably been prepared to optimize one or more operational parameter(s) of the device. Preferably the waveform shape data has been prepared by solving a waveform equation, the waveform equation having coefficients determined to optimize at least one operational parameter of the device. The number of coefficients determined for the waveform equation depends on the number of harmonics of the waveform that are within a bandwidth of the device. Other aspects concerns devices which utilize the drive circuit, methods for operating devices, the memory (212) which is utilized by the drive circuit (e.g., the drive circuit which produces the drive signal for the device having the piezoelectric actuator) to store the waveform shape data, as well as apparatus and method for generating the optimized waveform shape data.